

What if ...

**FLAG BECOMES THE STANDARD WAY OF
PLAYING FOOTBALL UNTIL HIGH SCHOOL?**

An Aspen Institute Sports & Society Program Analysis



About This Series, Paper

Hosted by the Aspen Institute's Sports & Society Program, Future of Sports is a quarterly conversation series that aims to think through the biggest ideas at the intersection of sports and society. We convene thought leaders from diverse perspectives, and ask, "What if ...?" The goal is to demystify and advance dialogue on paradigm shifts that could shape the future of sports.

The inaugural event in the series, in January 2018, was on the future of football, where we posed the question, "What if flag football was the standard way of playing the game until high school?" The event drew major media attention and trended on social media.

To further analyze the opportunity, the Sports & Society Program produced this white paper, co-authored by **Tom Farrey**, executive director, and **Jon Solomon**, editorial director, both journalists who have won national awards for their coverage of football issues. They can be reached at tom.farrey@aspeninstitute.org and jon.solomon@aspeninstitute.org.

For more on the Future of Sports series: as.pn/FutureofSports

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As the 2018 football season gets underway, a game that looms large in our sports culture – and the American experience over the past century – very much sits at a crossroads. At the NFL and college level, the sport remains popular, as a gathering place in a fragmented society and a geyser of content consumed by fans, gamblers, media and other corporations. But signs of erosion in public support are emerging, and at the youth and high school levels participation rates are down as parents and children question the wisdom of strapping on a helmet.

In 2017, the number of students playing high school football fell for the fourth consecutive year to 1.07 million, a one-year loss of 20,893 in an era when school-based participation in most other sports continues to grow.¹ One level down on community fields, among children ages 6 to 12, regular participants last year dipped to just under one million, a 17.4-percent decrease over the past five years.²

Some of that decline can be attributed to growing concerns over injuries, particularly those to the brain. In 2016, a UMass Lowell Center for Public Opinion Research survey found that 78 percent of American adults do not think it is appropriate for children to participate in tackle football before the age of 14, and that 63 percent believe it is either certainly or probably false that tackle is a safe activity for children before they reach high school.³ Among those sounding the alarm are a growing number of NFL players, including legendary quarterback Brett Favre, who in June called tackle football unsafe for kids. In July, prominent football journalist Peter King added his voice, deeming tackle "not all that smart" in middle school, and possibly even high school. This, in the same year that Tom Brady, who didn't play tackle football until high school, led the New England Patriots to a Super Bowl championship game for the eighth time.

In the wake of medical research revealing the harm that can be caused by both concussions and repetitive subconcussive hits to the head, state lawmakers in California,⁴ Illinois⁵, New York, and Maryland⁶ this year introduced legislation proposing



minimum ages of 12 years or older for tackle football participation. Around the same time, the Concussion Legacy Foundation, a Boston-based brain trauma research and advocacy nonprofit, launched a public education program⁷ that urges parents to delay enrolling their children in tackle football before age 14 for health and safety reasons. Separately, a group of mothers whose sons played youth football and subsequently were diagnosed with chronic traumatic encephalopathy (CTE), a neurodegenerative disease linked to repetitive brain trauma, also is campaigning for children under 14 to eschew tackle for flag.⁸

Flag is a less violent variant of the game in which participants neither tackle nor collide with each other in order to advance and stop play, but instead attempt to grab detachable flags hanging from opponents' waists. Advocates for delaying the starting age of tackle football argue that flag is a safer, age-appropriate alternative that reduces the risk of

brain and other injuries while encouraging children to learn the sport's fundamental skills and allowing them to enjoy the physical, emotional and social benefits of sports participation.

In homes and on fields across the U.S., this argument appears to be winning. Last year, in a little-noticed development, the game reached a significant milestone: Flag surpassed tackle as the most commonly played version of the game among kids ages 6 to 12 (3.3 percent played flag, 2.9 percent tackle), according to the Sports & Fitness Industry Association, which commissions an annual individual survey of participation in 120 sports and activities. Over the past three years, flag football participation in that age group is up 38.9 percent, more than any other team sport.

This white paper explores the consequences of this trend continuing, and asks: What if flag football becomes the standard way of playing the sport until high school? What are the implications for the sport, its stakeholders, and most importantly, the children who play the game?

We analyze this potential development from five angles:

- **Public Health:** Would delaying tackle football until high school make players safer?
- **Youth Participation:** Would flag bring more children into the sport, or drive them away?
- **Friday Night Lights:** What impact, if any, might there be on high school football?
- **Football Industry:** What could this mean for the NFL and college football, in terms of talent development, fan cultivation, and long-term bottom line?
- **Civic Life:** How would a shift to flag impact the values promoted through the sport?

We peer into the crystal ball on these questions with the aid of a diverse set of experts convened in January at the Aspen Institute in Washington, D.C. The inaugural event in our Future of Sports conversation series, *Future of Football: Reimagining the Game's Pipeline* ([as.pn/FutureofFootball](https://aspeninstitute.org/futureoffootball/)), featured panels that explored the above topics. The conversations were moderated by Sports & Society

Program executive director Tom Farrey and panelists included Dr. Robert Cantu, co-founder of the CTE Center at Boston University; Scott Hallenbeck, executive director, USA Football; Chris Borland and Domonique Foxworth, former NFL players; Buddy Teevens, Dartmouth College coach; Jennifer Brown-Lerner, policy manager for the Aspen Institute's National Commission on Social, Emotional, and Academic Development, and mother of a grade-school boy who plays football; Tom Green, Eleanor Roosevelt High School (Md.) coach; and Dr. Andrew Peterson, representing the American Academy of Pediatrics.

Their insights, many featured below, were supplemented with perspectives gleaned from a post-event online survey distributed to attendees of the event and members of the public, including those who watched on livestream. Survey results and comments shown in this report come from 62 responses by parents, high school and youth coaches, athletic trainers, medical professionals and others. Those perspectives – plus Aspen Institute research – form the basis of this report, which we hope helps parents, football leaders, educators, policymakers and other stakeholders make reasoned and ethical decisions about improving the delivery of the game for youth, our society's most valuable resource.

Each topic includes a discussion of the points of view shared, and an Aspen Institute analysis.

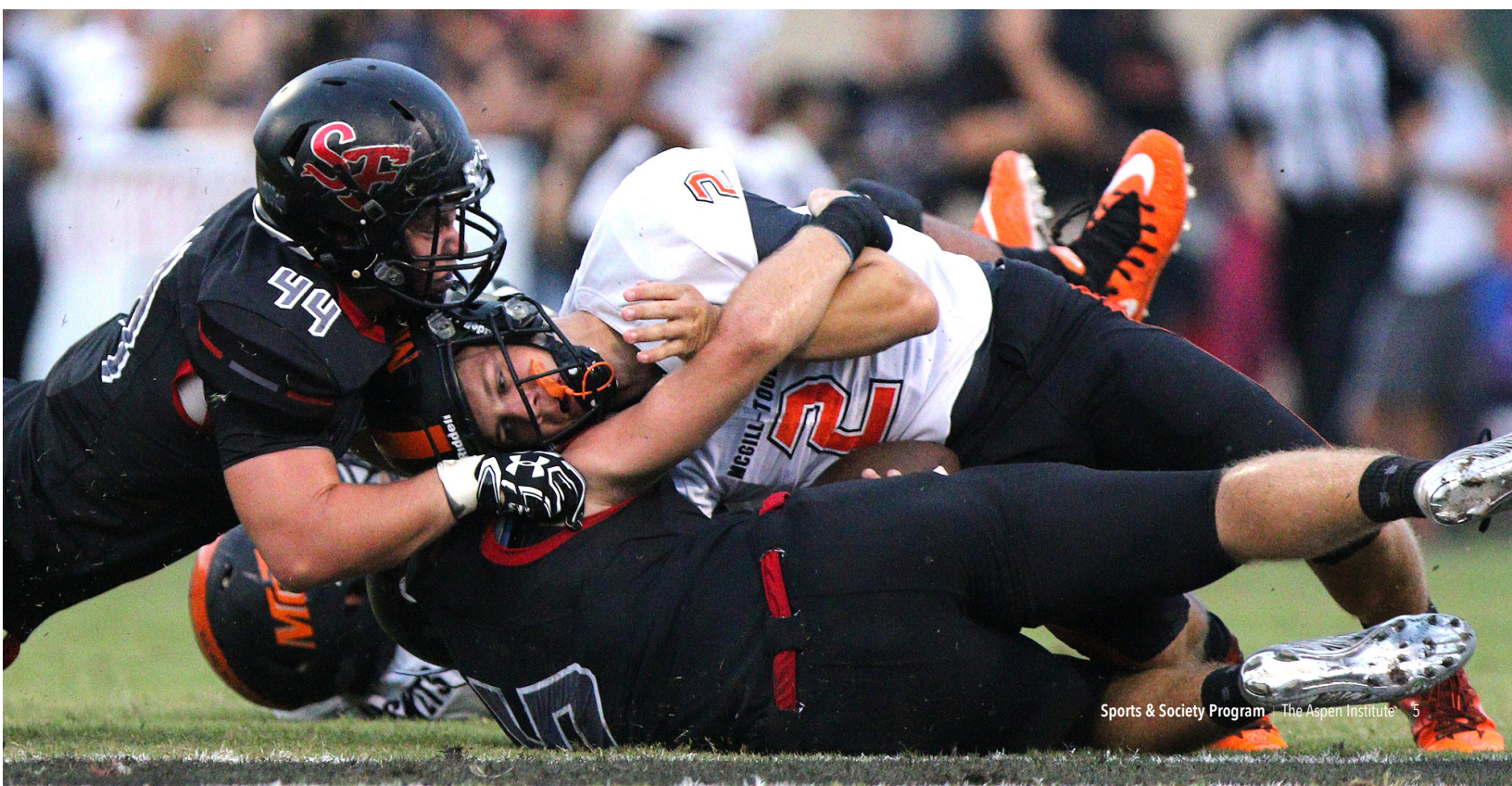
Our overarching conclusion: Children, the game and communities are likely to benefit if flag football becomes the standard way of playing before high school, with proper tackling technique taught in practice settings in the age group leading into it.

Public Health

Tackle football is a collision sport that promotes physical activity and offers psychosocial benefits but can also produce a range of injuries, including lasting damage to the brain. Research on the impact of head injuries has dominated the conversation around public health and football in recent years. While hard-shell plastic helmets are highly effective for preventing catastrophic skull fractures, medical experts recognize they do not prevent concussions nor subconcussive trauma, both of which can occur when an athlete experiences a blow to the head or sudden change in momentum that causes their brain tissue to stretch and warp – in turn resulting in metabolic dysfunction and/or structural damage.

With rest and a gradual return to regular activity, most athletes who suffer a single concussion experience a resolution of symptoms – such as headaches, dizziness and confusion – and no permanent ill effects. However, some suffer post-concussion syndrome, in which symptoms persist for months or years, in rare cases permanently. Multiple concussions are associated with an increased risk of post-concussion syndrome as well as long-term depression and memory problems. Athletes who suffer a second concussion while still recovering from a previous one are at risk for second-impact syndrome, in which the brain swells rapidly and catastrophically, causing severe disability or death.

Repetitive brain trauma also has been linked to CTE, which is characterized by the buildup of a toxic protein called tau in specific areas of the brain and associated with cognitive dysfunction and mood and behavior disorders. In 2017, Boston University researchers reported in the *Journal of the American Medical Association* that they had found the disease in the brains of 110 of 111 former NFL players, 48 of 53 former college players, and three of 14 former high school players they posthumously examined.⁹ The study has several important limitations, most notably the lack of a control group, and selection bias



“I’m somewhat incredulous that we even discuss the reasonability of hitting a 5-year-old in the head hundreds of times. It baffles me inside. I think you can wait to play.”

– Chris Borland, former San Francisco 49ers linebacker who retired from the National Football League after one year due to concerns about head injuries



in the brain collection because families of players with symptoms of CTE are far more likely to donate brains to research than those without signs of the disease. Still, Boston University’s ongoing CTE research suggests a dose-response relationship between subconcussive hits and CTE: the more blows taken over time, the higher the risk of developing the disease.

Medical scientists believe children may be particularly vulnerable to brain injury in collision sports like football – in part because their brains are physically immature and have still-developing neural circuitry, and in part because they have relatively large heads and relatively weak neck and shoulder muscles when compared to adults, increasing the likelihood of a brain-jarring “bobblehead effect” during impacts. A recent Centers for Disease Control and Prevention report to Congress on the management of traumatic brain injury (TBI) in children states that brain injuries:

- Affect “children differently than adults.”
- Can disrupt children’s “developmental trajectory” and cause changes in “health, thinking, and behavior that affect learning, self-regulation, and social participation, all of which are important in becoming productive adults.”
- Can negatively affect a child’s “future ability to learn and perform in school.”
- Correspond with imaging studies of children that have found “reduced brain size and structural changes in certain areas of the brain,” supporting the notion that “disruptions in brain systems during childhood could underlie observed behavioral and neurocognitive changes, and academic problems years later. Although the exact effects of a childhood TBI on brain development require more study, emerging physiological and imaging findings of anatomic changes suggest the importance of protecting children from sustaining TBIs.”

In 2013, researchers at Virginia Tech University and Wake Forest University found that 7- and 8-year-old youth football players received an average of 80 hits to the head per season, while boys ages 9 to 12 received 240 hits.¹⁰ Some of the impacts were measured at 80g of force or greater, equivalent to a serious car crash.

A 2018 study published in *Pediatric Neurology* found that college athletes who reported suffering their first concussion before age 10 were twice as likely to have a subsequent concussion than those who reported their first concussion occurred between ages 10 to 18. A 2016 Wake Forest study of football players ages 8 to 13 found that the more blows to the head they sustained over the course of a single season, the more changes were shown in their brain’s white matter¹¹ – bundles of insulated neurons that facilitate communication between different areas of the brain. A 2017

Boston University study linked beginning tackle football before age 12 with increased risk of depression, cognitive impairment, and behavior problems over time.¹²

“All of our studies are pointing towards subconcussive impacts causing a change in the brain,” says Elizabeth Davenport, a University of Texas, Southwestern researcher who has studied the brains of youth and high school football players using imaging technology. “Everything that we've seen has shown that just a normal football season will cause changes in the brain. And then we also see that if you have a concussion prior to the season, your brain changes differently. So it points towards a concussion never kind of ending.”¹³

Cantu, co-founder of the CTE Center, says the maximal age for connectivity of brain networks primarily occurs between the ages of 10 and 12. That's the window that significantly helps shape what a person will be like as an adult in regards to IQ, emotional makeup, depression, anxiety, panic attacks and impulsivity, among other areas. “If you injure a brain at that early age, you have later life potential consequences,” Cantu says. “Multiple papers we've been a part of have shown if you play tackle football under the age of 12, you have a higher chance later in life to have cognitive behavioral and mood problems than if you started at a later age.”

To reduce the above risk, Cantu advocates that tackle football not be offered to children until age 14 – flag only until then – and for similar restrictions on body-checking in youth hockey and heading the ball in youth soccer. He first proposed as much in 2012 in his book with co-author Mark Hyman, *Concussions and Our Kids*. A senior advisor to the NFL's Head, Neck and Spine Committee, Cantu says recent research further supports his point of view.

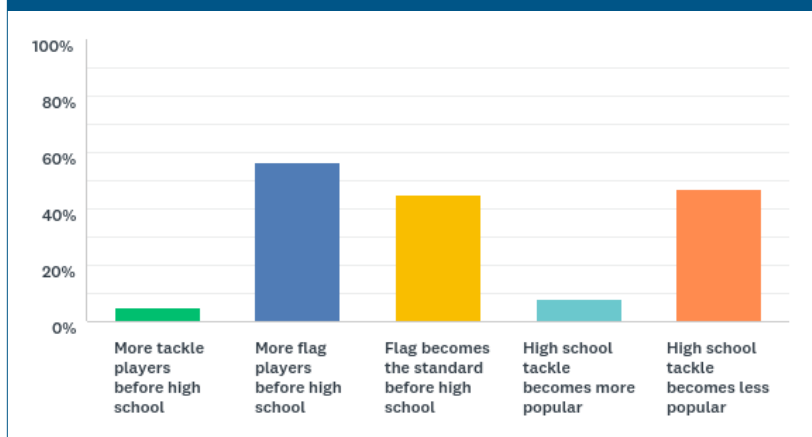
Former University of Maryland football and NFL player Madiou Williams is currently a law school student and intern in the office of Terri Hill, a physician and Maryland state representative who introduced a bill that would have prohibited children from playing tackle football on public fields until they reach high school. Williams supported Hill's bill, which did not pass, and says that his own son won't be allowed to play tackle football until high school. “There hasn't been a study tracing the impact of concussive impact with brain injuries all the way to adulthood,” Williams says. “That doesn't mean potential damage is not there. If we can limit exposure of our youth at a young age, given that they have very weak neck muscles and more importantly to protect the brain from any type of injury, it's very important to do so.”

However, the brain injury risk posed by tackle football is difficult to quantify. A definitive causal link between youth football participation and long-term neurological disease has not been established. Most of the research linking football-induced head trauma to acute and chronic brain changes and damage involves

“I think if we're going to make dramatic changes to the game, we need dramatic evidence that what we're doing here has a real public health burden. And I'm not sure that there is a meaningful public health burden of the injuries that occur in youth football.”

– Dr. Andrew Peterson,
University of Iowa football
team physician and
executive committee
member of the American
Academy of Pediatrics
Council on Sports
Medicine and Fitness

Which scenarios do you think are most likely to unfold by the year 2030, as research, policy, law and other factors evolve?



Source: Aspen Institute survey

former professional and college players; athletes whose football careers did not extend beyond youth and/or high school are not as well-studied. It is unclear exactly how risky youth football participation is, or how many hits to the head over the course of a football career is likely to be too many.

Many individuals who participated in youth and/or high school football appear not to have suffered lasting or clinically significant brain injury. A 2017 study published in *JAMA Neurology* found that men who played high school football in the 1950s in Wisconsin did not have a higher risk of poor cognitive or emotional health later in life than those who did not play the sport.¹⁴ A 2016 Mayo Clinic study found that

football players from a Minnesota high school who competed between 1956 and 1970 did not have an increased risk of degenerative brain diseases compared with athletes in other varsity sports.¹⁵

Both the short and long-term clinical significance of brain changes observed via imaging studies of youth and high school football players is unclear, though some are concerned. “There’s a lot of talk about CTE and these NFL players and having these really detrimental effects on your life,” says Davenport, the UT Southwestern researcher. “But in the youth football players, we see these changes in the brain before we see a change in their behavior and their cognitive ability. So they’re still doing really well in school, they’re still great kids; we’re not seeing a whole lot of changes in their outward personality. But what the MRI and what the MEG see (through images of the brain) is a little bit different, and it is telling this kind of ‘micro-story’ of what is going on in the brain.”¹⁶

However, a 2018 op-ed published in the *Minneapolis Star-Tribune* and co-authored by a neurologist, a neuropathologist, and a lawyer argued that current scientific evidence is not strong enough to support establishing an age of entry for tackle football.¹⁷ The article also cautions that restricting participation to tackle football could have an unintended public health cost if it results in fewer children overall playing sports, given that participation offers youth “a way off the couch” and promotes “the adoption of an active lifestyle, thereby mitigating the risks of, among other conditions, obesity, high blood pressure, diabetes, depression, osteoporosis, cardiovascular disease, stroke, drug use, teen pregnancy and, ironically, dementia.”

University of Iowa researchers studied three youth football leagues – one flag, two tackle – consisting of players in the second through seventh grades and found that injuries were more likely to occur in flag football than in tackle. They also found there was no significant difference in the number of severe injuries and concussions between flag and tackle leagues. The study has limitations given that the number of injuries seen in the flag football league was relatively small, and the number of participants in the flag league was much smaller than the number of participants in the tackle leagues. Cantu calls the study “flawed” in several ways, questioning how comparisons could be drawn given its reliance on self-reported data, that only three concussions were found in flag football, and no analysis of subconcussive hits was conducted.

Peterson, the paper's co-author, stands by its findings and believes that children should be able to play tackle football as young as they want. "I don't think we need to legislate or mandate or codify these types of things," he says. "You know, the rates of injuries are very low here. The things that we're looking at and that Dr. Cantu was talking about are mainly in people that have very, very long playing careers and the vast majority of people that are playing contact collision sports don't have these careers that go on through the NFL lasts decades. I think having a few years of exposure to contact sports as a young person is a fairly safe thing to do, and that we shouldn't make decisions based on what's happening to a handful of people at the NFL level."

Peterson argues that the health benefits of playing tackle football simply outweigh the risks. His point of view is consistent with that of the American Academy of Pediatrics' Council on Sports Medicine and Fitness, which Peterson sits on. In 2015, the Council issued a policy statement on youth tackle football that acknowledged the sport's dangers but stopped short of recommending that children not play. Instead, the organization concluded that it should be up to participants to decide whether those risks "are outweighed by the recreational benefits associated with proper tackling" – a softer position than the AAP took in the 1950s, when it recommended that children under age 12 be excluded from body-contact sports, including tackle football.¹⁸ Critics howled, noting the organization recommends that body-checking in hockey begin at age 15¹⁹ and that no one under age 18 participate in boxing.²⁰ Even some pediatricians objected. In 2017, a survey of AAP members found that 77 percent would not allow their son to play tackle football and that 81 percent endorse limiting or eliminating tackling from football practices.²¹

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Peterson's point is not to be overlooked, and he is not alone in recognizing the larger picture. Among youth, only 36 percent of males and 17 percent of females today get the recommended level of one hour of daily physical activity, according to Centers for Disease Control and Prevention; stakeholders recognize the need to get more of them moving, given the documented mental and physical benefits that flow to those whose bodies are in motion. Tackle football is one option for children, especially for heavier kids, a factor that deserves consideration given the health-care costs tied to obesity-related



illnesses. If just half of all youth become physically active at the recommended level, and stay active into adulthood, the nation will save \$20 billion in direct medical costs and \$32 billion in lost economic productivity, according to projections by the Global Obesity Prevention Center at Johns Hopkins University that were commissioned by the Aspen Institute.

At the same time, it's hard to quantify the value that tackle football brings to that opportunity. Only 2.9 percent of children between ages 6 to 12 played the game on a regular or "core participant" basis in 2017, according to Sports and Fitness Industry Association (SFIA) data. Further, it's unclear how early participation in tackle football impacts a person's desire or ability to be active for life. If a child suffers a knee or spinal cord injury that limits their mobility into adulthood, or a brain injury that affects emotional or cognitive function, what are the downstream costs on the individual and public health at large, including taxpayer burden? More research is needed to tease out answers.

To their credit, football leaders aren't waiting for all answers to come in to begin reforming youth tackle. Pop Warner has issued limits on tackling and contact in practices, and eliminated kickoffs. USA Football, the NFL-supported entity that helps guide the development of the sport nationally, has created coaching education modules and in 2017 introduced a "Rookie Tackle" pilot program that has a smaller field and fewer players. However, other sports have moved more aggressively to reduce and eliminate blows to the head. The U.S. Soccer Federation has banned heading the ball for children under age 10 and limited headers in practice for children ages 11 to 13. USA Hockey has delayed the introduction of body-checking in games until age 13 – while teaching such skills in practice in the age group leading into it. Hockey Canada followed suit in 2013; injuries subsequently fell by half and concussions were reduced by two-thirds.²²

The emerging evidence suggests that football can make a more meaningful contribution to public health by holding off on offering tackle until at least adolescence. If the hockey model were to be followed, football players would learn proper tackling techniques in controlled practice settings in the year or two leading up to the age at which tackling is introduced in games, allowing for a safer introduction to such activity.

In public health, another consideration is the precautionary principle, which holds that in the case of serious or irreversible threats, acknowledged scientific uncertainty should not be used as a reason to postpone preventive measures. That principle is now being engaged by some pediatricians, who have started refusing to sign pre-participation physicals for youth tackle football. The burden of proof in demonstrating safety or harm has shifted away from critics to those providing sport programming, who bear a special obligation given that in their hands are the lives of children.

Youth Participation

Jennifer Brown Lerner is torn. She has fond memories of growing up in Georgia, immersed in the culture of football – from the rooting interests to the tossing of balls in the front yard with her brothers. So on the one hand, she wants her two young sons to be able to play the game. But on the other, she doesn't want them to be seriously injured. "I remember as a child, and still do, my family has a pickup game over the holidays when we're together," says Lerner, policy manager for the Aspen Institute's National Commission on Social, Emotional, and Academic Development. "I don't want my kids to be like, 'What's a first down?' That's not okay. That's almost un-American. "But I struggle with what the [medical] research is telling us ... as a parent you have this emotional response ... and that makes you think long and hard about whether or not you want your own child to participate in this."

Lerner's reluctance to allow her children to play tackle football isn't unique. In 2013, President Barack Obama told *The New Republic*, "If I had a son, I'd have to think long and hard before I let him play football."²³ Citing health concerns, active and retired National Football League players have stated publicly that they will not allow their own children to play tackle until junior high or high school age.²⁴ The *New York Times* even reports that parents' concerns over tackle's safety are "surfacing in legal battles between divorced couples, leading to an increase in fights over whether to amend custody orders to prevent their children from playing the game."²⁵

Flag football offers a less-worrying alternative – a way to keep safety-conscious parents and families from abandoning the sport altogether, and to slow or reverse the ongoing decline in overall youth football participation. In Florida, for example, a youth flag league founded by former University of Maryland quarterback John Kaleo has

served more than 7,000 kindergarten through middle school-aged children since its 2014 inception and is now sponsored by the national sports apparel company Under Armor. Participants in the 7-on-7 league use tackle football plays, concepts and terminology. "Today's parents are very concerned about the safety and the head injuries that are occurring in physical sports like football," Kaleo told the *Tampa Bay Times* in 2017.²⁶ "There's a large group of kids that still want to play football, but they're hesitant to put a helmet and shoulder pads on."

In Mobile, Alabama, former NFL general manager Phil Savage helped run an NFL flag football league. The goal, he says, is to give families an alternative pathway for children to

Youth Tackle Football Coaches With Training		
Percentage of coaches who say they are trained in key competencies has fallen		
	2012	2017
CPR/Basic First Aid	55.9%	51.5%
Concussion Management	43.6%	38.8%
General Safety/Injury Prevention	53.1%	43.4%
Physical Conditioning	52.4%	44.9%
Sports Skills/Tactics	46.7%	43.3%
Effective Motivational Techniques	32.6%	34.6%

Source: Sports and Fitness Industry Association data from national surveys taken by Sports Marketing Surveys

“I’m not talking about abolishing football. I want more people to play football. I just want youngsters at highest risk not to be getting their head hit 200 times over the course of an average season, because you couldn’t do that to your child and get away with it – and I certainly couldn’t have done it to mine – and yet they can do it to themselves on athletic fields.”

– Dr. Robert Cantu,
on why he supports flag
football instead of tackle
before high school



enter into football and possibly play tackle as a teenager. “I played tackle at 6 years and up,” says Savage, who recently departed as executive director of the Senior Bowl, a week-long event for the NFL to scout college prospects. “I think it’s a different generation now. There’s a lot more information out there regarding safety and concussion concerns. My personal feeling is I think you should wait (for tackle) until you’re a teenager. I would have hesitancy with youth tackle football because of the safety and the coaching that’s out there, though I’m sure there’s some amazing coaches.”

Despite the push by USA Football in recent years, most youth coaches remain untrained in key competencies. Only 38.8 percent of adults who have coached football teams of children ages 14 or under in the past five years say they have received education in concussion management, and only 43.3 percent say they have been trained in sport skills and tactics; those numbers are actually down from 2012 (see chart on page 11). The inability to move those numbers reflects the state of youth coaching, which is dominated by a revolving door of volunteers and, in football especially, locally-run independent leagues with minimal oversight.

In that vacuum, coaches still sometimes promote dangerous practices, such as the Oklahoma drill, in which children slam into each other, one on one, to promote toughness. An article on the USA Football website in 2018 said that the drill “shouldn’t be used until players have the physical and cognitive ability to execute it safely.”²⁷

Physical aggression, domination, and violence are at the core of tackle football’s appeal to both spectators and participants. A Tampa, Fla.-based youth tackle league that plays fall and spring seasons promises to let its 3,000 members “play the game the way it was meant to be played.”²⁸ While the league also offers flag football for children ages 4 to 6, its president, Scott Levinson, told the *Tampa Bay Times* in 2017 that flag is not a sufficient substitute for tackle: “If you’re playing a game of H-O-R-S-E or 21 in basketball, you are nowhere near as intense as you are if you were playing a game of 5-on-5. I believe it requires much more intense teamwork. I believe it requires much more trust.”

If purposeful hitting and collisions are removed from youth football, it’s possible that children and parents who want those elements may pursue other sports – or no sports at all. Children looking to emulate popular high school, college, and professional tackle football players may be particularly discouraged. Dr. Uzma Samadani, a Minneapolis neurosurgeon who has authored articles opposing youth tackle football bans, cautions that “children with no predilection for speed sports requiring stamina or endurance” – such as the “heavier or asthmatic child who can’t run well enough to play flag”²⁹ – may be left with few sports options without tackle.

Peterson, the University of Iowa football team doctor, adds: “There are only so many opportunities for people that want to do physical things. Like, there are certain people that really like contact – like

pushing someone else around, doing something that's a little bit more violent. And football is one of the reasonable outlets for that. There are other sports that are a lot like that ... some of the combat sports are like that, wrestling is like that, hockey is like that to some degree at the higher levels. But I do think we worry about alienating these kids. I think football is an outlet for that type of physicality for kids that want to push other people around."

ASPEN INSTITUTE ANALYSIS

Replacing youth tackle football with flag likely would result in reduced participation by children and families for whom hitting, blocking, and tackling are the point and purpose of the sport – the only reason to choose it over, say, baseball or swimming. However, it is unclear how many of the roughly one million youth who currently play the game would opt out. We suspect most would adapt to flag and the game would prosper, just as hockey did after it introduced its body-checking ban. Since 2012, the number of children playing hockey on a regular basis is up 56 percent (to 512,000 children ages 6 to 12), more than any other team sport tracked by the Aspen Institute through the SFIA annual survey data.

More importantly, prioritizing flag before high school holds the prospect of inviting into the game many potential participants who otherwise are inclined to steer clear of football due to injury concerns. It could remove the psychosocial stigma of boys being, as former NFL cornerback Domonique Foxworth puts it, "just a little bit softer" than their tackle-playing peers, while also making the game more attractive to girls. Last year, females across all age groups accounted for only 5 percent of tackle football's core player population – and nearly 18 percent of flag football's core player population.³⁰

USA Football currently takes the position that flag and tackle are both good, at all ages. It has no plans to recommend a minimum age to transition from the former to the latter, and in many communities that happens around age 7 or 8. However, that stance could change, USA Football executive director Scott Hallenbeck told attendees at our January event. "As [medical] information [on football's risks] continues to come out, I know USA Football and our board and, I think, really every stakeholder I talk to is all about, 'We're going to have to follow the science, period,'" he said. "So as this continues to come out, we have to pay attention to that, we have to continue to address repetitive hits. That is unequivocal."

Lerner already has made her decision. Her 8-year-old son has been playing flag the last two years. "Flag has been a great way to not only expose my son to football, but also to gain a lot of the skills and experiences that we really want as parents – and that [the] commission I work for is really pressing through participation in sports," she says. "I'm thrilled, I have an option K-8 for my kid to play football. I'm going to think long and hard about what happens after that."

"Short of combat sports, boxing and MMA and karate or whatever, there is no other mainstream sport where you can go as a little boy up against another little boy and pretend like you're a man and try to beat them. When you're 5 or 6 years old and you see movies that are about men being strong and tough, and you see ads about the military, about men being strong and tough, the idea that you can grab on to something like that and you can go to school in your football jersey and that separates you from all the other kids, all the other boys, who are just a little bit softer than you – it's all part of your thought process."

– Domonique Foxworth, writer at *The Undeclared* and former NFL cornerback, on the appeal of tackle football to young children

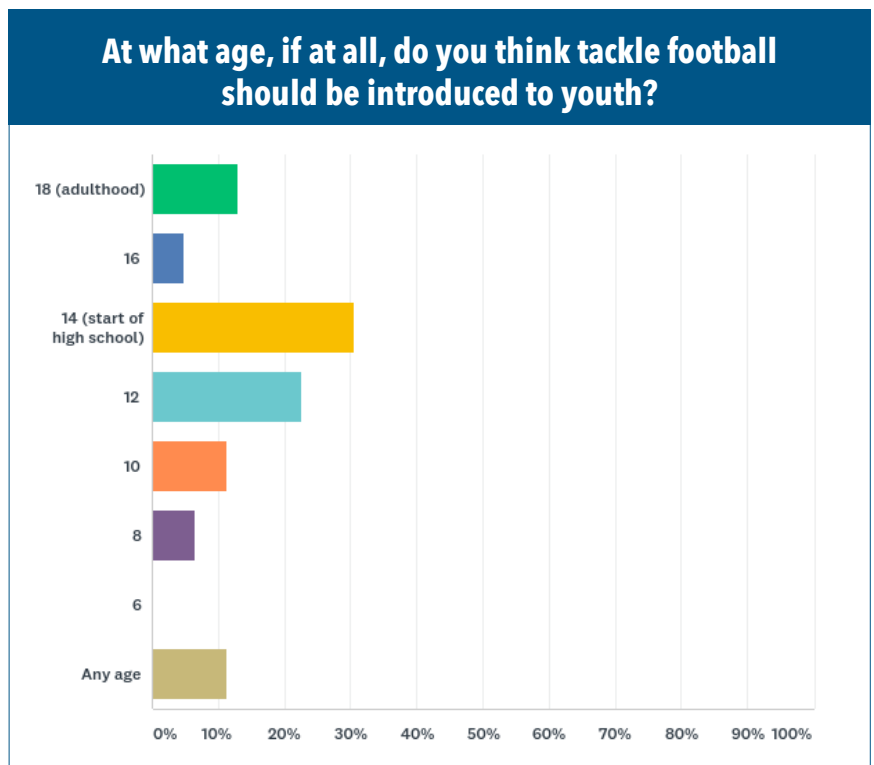
Friday Night Lights

Similar to its youth counterpart, high school football has suffered a participation decline, falling from 1.14 million players in 2008 to 1.07 million in 2017.³¹ According to the National Association of State High School Federations, 41 states saw a drop in players between 2011 and 2016, and a disbanding of programs in Maryland, New Jersey, and California.³² In 2017, 20 schools discontinued 11-player football, and additional public reports of cancellations surfaced prior to the 2018 season. In Vermont, where Dartmouth is located and high school football has faded, tackle football at all middle schools has been eliminated, with a mandated shift to padded flag.³³ In padded flag, players continue to wear helmets and pads, and there is contact at the line of scrimmage. However, every player also wears flags around their waist, and any ball carrier may be tackled only by pulling off one of the flags.

Could a wider pipeline of players coming up through flag deliver more bodies and enthusiasm for tackle football at the high school level? Once hooked on flag, with teaching of tackling techniques in practice, how many of them would want to transition into tackle come ninth grade? How much sway could a parent have in preventing as much?

These are questions worth asking for anyone who values the institution of high school football, whose role in many communities runs deep. Friday Night Lights are seen by many as a useful and even essential venue for students and adults to come together for a shared purpose, especially in small towns. The viability of fielding teams is threatened when participation drops, as football needs roster sizes that well exceed the number of players on the field, due to its relatively high injury rate (tops among high school sports³⁴) that sidelines players in-season.

Tom Green, Eleanor Roosevelt High School coach and athletic director in Greenbelt, Maryland, says that delaying first exposure to collisions until high school could place participants at greater injury risk, if they are unaccustomed to contact and untutored in the skills of blocking and tackling. Other coaches share this concern. "Flag is a good alternative for youth prior to middle school – it is a good vehicle for teaching fundamental skills and developing a love for the game," says Mike Mach, an assistant football coach at Detroit



Source: Aspen Institute survey

Catholic Central High School in Novi, Michigan. "I believe that to forbid contact football until high school is excessive, and it eliminates far too many opportunities to teach safe participation at a young age."

Some also wonder if delaying tackling until high school will diminish the quality of players at the high school level, and beyond. Carter Caplan, a Drexel University sports management student who aspires to become a college athletic director, says that "practice makes perfect. You need to put in years of training in order to get recruited, and I believe the skill level in college football would go down if the athletes are not allowed to start learning how to play the game correctly and developing their skills from a young age."

Skills matter – though so do size, speed and strength, often the separating factors between a good high school player and one who gets an offer from a Division I college program.

Dartmouth College coach Buddy Teevens thinks high school football will be just fine if tackling is introduced in games in ninth grade, and in limited doses. His confidence is rooted in his experience at Dartmouth, where six years ago he and his staff eliminated all tackling outside of games. "It was a combination of things," he says. "Concussive head injury, studying my players' injuries, I just thought there had to be a better way. It was not the most well-received thing with my coaching staff. We thought, 'We're done. We'll be fired.' But I thought it was the best move for my players."

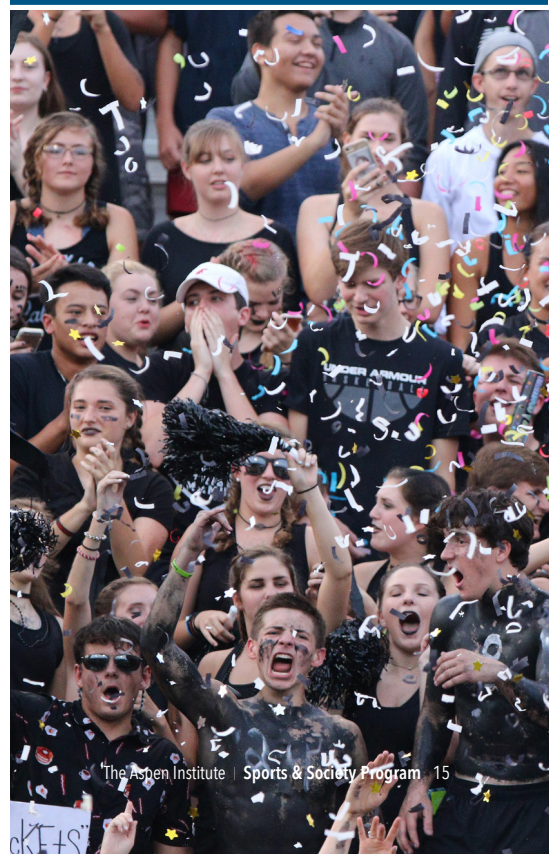
Since then, Dartmouth has enjoyed a winning record in five out of seven seasons and captured an Ivy League championship. "Concussive head injuries have dropped appreciably," Teevens says. "Peripheral injuries have dropped appreciably. My guys are playing healthfully. We have less subconcussive [hits to the head] than anybody in the country at the [NCAA] Division I level."

Teevens' players still practice tackling – just not against each other. They perform drills designed to minimize injury and avoid head contact, and sometimes practice by tackling a specially-designed robot. He says Dartmouth now is one of the best tackling teams in the country and misses only five tackles per game. "Why is that? The skillset of tackling can be taught on inanimate objects, and that's my big push," Teevens says. "I think there's way too much contact at any level. I think coaches are the ones who drive it."

"[When] I spoke with [the] American Football Coaches Association, I said that our collective body can fix this right now. We design practices. We approve drills. We say yes or no, if we push contact and aggressiveness, our players are going to reflect it and they're going to get hurt. It's a real simple equation: the more you hit, the more you will get hurt. [So] minimize contact."

"I think a lot of the youngsters need to learn how to tackle. . . . [The] basis is still blocking and tackling. So I think [age] 10 is too young. But one or two years before high school to teach them how to tackle and how to block with equipment, I think that's important. You may have more injuries if the kids don't start playing until high school."

– Tom Green,
Eleanor Roosevelt High
School (Greenbelt,
Maryland) coach and
athletic director



“Yeah, I'm okay waiting (on tackling) until high school. You know, I don't have (any) problems. ... Can they learn the skill set? I think that they can. I'm also a realist, and I'm not sure people in this country will eliminate tackle football. My approach is, how do we mitigate and limit the amount of tackle or contact at the different age groups?”

– Buddy Teevens,
head coach,
Dartmouth College

ASPEN INSTITUTE ANALYSIS

New England Patriots quarterback Tom Brady did not play tackle football until high school. Nor did Pro Football Hall of Fame members Jerry Rice, Jim Brown, Walter Payton, Anthony Munoz, Warren Sapp, Mike Haynes, Michael Strahan, and Lawrence Taylor – several of whom were known for their tackling ability. There's no evidence to suggest youth tackle participation is a necessary precondition for high school, college and professional success, nor any showing that exposure to tackle football prior to high school reduces the risk of injury.

As such, we project that making flag the standard way of playing football until high school ultimately will benefit an institution many stakeholders care to preserve and enhance. Safety-conscious parents and children will be more likely to participate in youth flag, expanding the pool of potential high school players. High school players will enter tackle football with less prior exposure to collisions and head injuries that could sideline them permanently, given that each concussion makes an athlete more susceptible to additional concussions.

We find it unlikely the quality of high school play will be diminished overall, or the quality of college recruits, if coaches teach the game effectively. Green says the skills of quarterbacks and wide receivers would not change, adding, “I think it may affect the linemen, the big kids up front, the blocking, [a] lot of those kids get an opportunity to play now with tackle football.” But Green also says high school coaches could adjust and prepare players for college if flag became the standard for kids up to 14.

Teevens believes key features of Dartmouth's model can be adopted at the high school level, both to reduce exposure to head trauma and better teach athletes how to tackle. “Can you learn a [tackling] skillset [starting in high school]? Yes, I think that you can ... and it's on coaches,” he says. It's all on the coaches, who will have to innovate and lead in new ways.

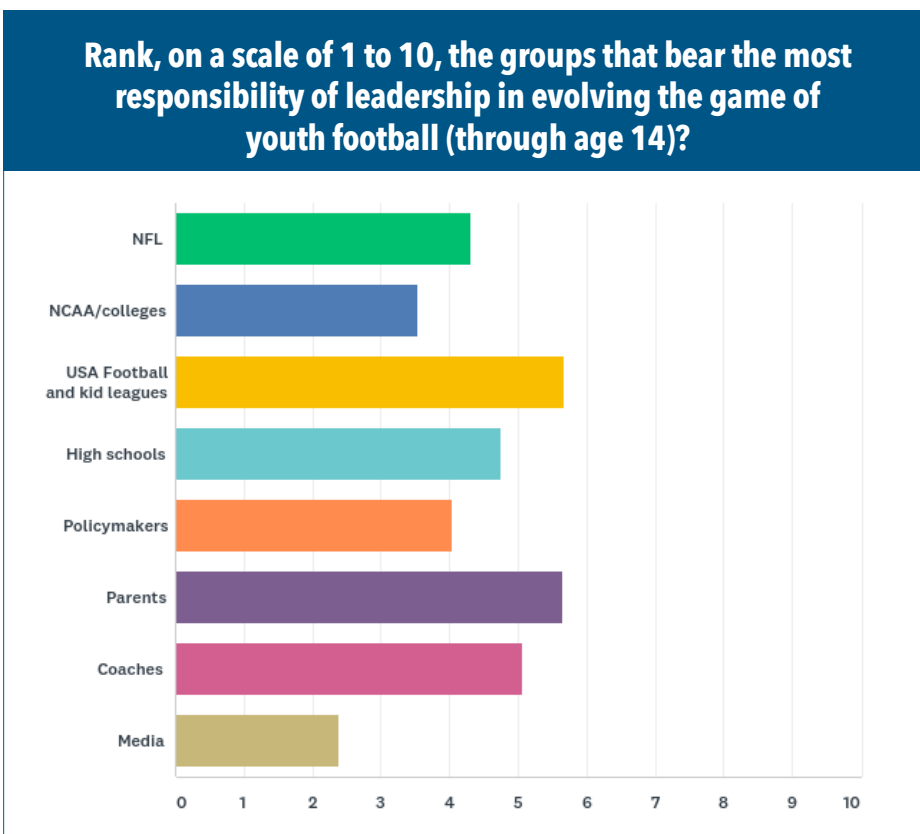


Football Industry

More money flows through football than any other sport in the U.S. Public universities that are in college football's highest division make more than \$8 billion for their athletic departments³⁵, with football supplying the vast majority of that revenue, helping fund top-tier football programs and teams in other NCAA sports. The NFL is a \$14 billion industry whose commissioner, Roger Goodell, has set a goal of pushing that number to \$25 billion by 2027.³⁶ Media companies like ESPN recognize that kids who play a game are three times as likely to become "avid fans" – their core customers – as those who don't play, and that connection is enhanced the earlier that a child gets exposed.³⁷ The bottom lines of helmet manufacturers are heavily dependent on enthusiasm for tackle football at the youth levels.

All of these industry players, and more, have a vested interest in the future of the youth game. Not all of their interests align perfectly. But all play a role in shaping the model that emerges.

Much of the football industry's energy to date has gone into holding on to its base of true believers in tackle football for youth, encouraging parents who are inclined to sign their child up that the risks are no greater – or less great – than other childhood activities such as bicycling or skateboarding.



Source: Aspen Institute survey

A palpable fear runs through some of the messaging suggesting this is an existential issue for the game at all levels, a notion that some observers of the game subscribe to.

Predicts Dr. Thayne Munce, associate director of the Sanford Sports Science Institute, "If you convince the public – and mothers in particular – that tackle football is too dangerous for kids to play, narrow the pipeline of players to [high school] football, and shrink the fan base, tackle football will collapse upon itself. All the way up to the NFL."

Sharing a similar point of view is documentary filmmaker Sean Pamphilon, director of *The United States of Football*. "Banning tackle football for kids

“I think this discussion is much bigger than asking if flag football should be played before high school. The entire future of football in the [United States] will be affected by this direction.”

– **Thayne Munce,**
Associate Director,
Sanford Sports
Science Institute

until high school becomes the warning label on the cigarettes,” he says. “It will impact the way we see the game once we truly are honest about the way it impacts human beings of any age.”

Analogies have been made to boxing, which in the first half of the 20th century was among the nation’s most popular spectator sports. Boxing began to fade for a mix of reasons, among them greater awareness of the brain damage suffered by, with slurred speech of, well-known professional fighters. Today, boxing is a niche sport, watched by relatively few, with its participants drawn almost exclusively from lower socio-economic communities. Compared to other team sports, football already pulls more often from lower-income homes, and analysts have predicted that trend continuing as families with means find sports with less injury risk.

Others find the boxing comparison to be overstated. The NFL and college football providers have an array of assets at their disposal to ensure the game’s continuation as a mass spectator sport, among them infrastructure (fields and stadiums) that schools, universities and governments have invested in, long-term media contracts that ensure publicity and money, and scores of billionaire franchise owners and university trustees with the influence to look out for football interests.

Some segments of the industry are more vulnerable to disruption than others, if flag becomes the youth standard. The most obvious: Manufacturers of protective equipment for tackle football. A Riddell youth helmet with “patented side protection” alone costs nearly \$400. Among the opportunities to adjust their business model in a flag-first environment: Sell more lightweight or soft-shell helmets that protect against incidental contact³⁸, or shoulder pads that permit flag or touch players to “dress up” and cosmetically emulate the contact version of the sport. HIP Football, a two-hand-touch youth variation of the game founded by former University of Alabama and Baltimore Ravens player Tim Johnson, offers that opportunity.³⁹ Such equipment could be useful in introducing tackling techniques in controlled practice settings as children approach high school.

Similarly, youth football organizations currently associated with tackle football may have to reinvent themselves. Pop Warner is the oldest such organization in the country, founded in 1929 with teams for adolescents. Over the years, it has added divisions for kids of increasingly younger ages; tackle now starts at age 7 (Mitey Mites). At an Aspen Institute roundtable in 2012, Pop Warner executive director Jon Butler doubted he could promote flag aggressively without families fleeing to independent leagues that offer tackle. He expressed a similar sentiment in 2017 when asked by the *New York Times* about introducing a modified version of tackle football for children that would reduce the size of the field, the number of players participating, and the amount of physical contact that takes place. “We’d get a rebellion if we tried this because so many people don’t want to be told what to do,” he said.⁴⁰



ASPEN INSTITUTE ANALYSIS

Whether the football industry wins or loses from any shift to flag as the youth standard is largely a function of how readily it embraces disruption. Just as some media, transportation, telecom, and other companies thrived when technology challenged their prevailing business model and forced them to innovate – and other companies merely tweaked their models and floundered – it’s reasonable to conclude that so, too, will each respective football entity.

A key question is how many children the industry believes it can engage. To date, leaders have been reluctant to forcefully challenge its current base with a new model, concerned that it might lose families of the 2.9 percent of kids who play tackle, especially in traditional strongholds like Texas and Louisiana. Again, that’s a pretty small number, and as more studies emerge offering new insights on brain trauma, it’s hard to imagine it growing much. Flag is a lower-cost, more-accessible form of the game for many children. If that becomes the standard, and it’s promoted more vigorously in schools and communities by the NFL and college football, it’s not hard to imagine football closing the gap in the regular participation levels of basketball (14.1 percent), baseball (13.1 percent) and soccer (7.7 percent) for kids ages 6 to 12. And with every new participant comes new data and marketing relationships that can be developed.

Legal risks will drive some of that disruption. They already have. In 2016, a California football player, the late Donovan Hill, won a seven-figure settlement from Pop Warner; he was paralyzed and his brain damaged at age 13 after a headfirst tackle maneuver taught by his untrained coaches. The settlement exposed the vulnerability of volunteer coaches, who were sued, as well as the weakness of indemnification clauses in preseason documents presented by teams and signed by parents presumably on behalf of their children. Weeks later, Pop Warner settled another lawsuit, this one a \$5 million wrongful death claim brought by the mother of another former player who died and was diagnosed with CTE for an undisclosed amount.⁴¹ Currently, Pop Warner is facing a suit brought by the mothers of two former players who died and were subsequently found to have CTE; that one’s a class action, representing all players since 1997.⁴²

Standardizing youth flag should help reduce both insurance and equipment costs, which in turn may grow access to what can be an expensive game. Football also will be better positioned to capitalize on the growth of female sports participation, rather than making do with a relative handful of girls’ tackle players and leagues while losing athletes to other sports. Finally, standardized youth flag could lead to more ongoing high school, college and adult flag participation – growing and benefitting the football industry as a whole, and transforming the sport into an activity for life, like tennis, which welcomes participants from age 5 to 55 and can be played in a variety of settings, from pickup games to family outings.

“Living in reality, I don’t think tackle football is going away, but I think the idea of (creating) a framework and more entry points, gives parents the choices they need. ... Why do you have to stop (flag) at 14? Nevada and Florida actually have girls flag in varsity sports. We want to talk to the state associations and really see an opportunity to stay in a sport for a long period of time.”

**– Scott Hallenbeck,
USA Football
executive director**



Civic Life

In January 2018, days after our Future of Football conversation, USA Football held its annual conference in Orlando, Florida. We attended that event, where former NFL players, coaches, and Sen. Marco Rubio gave a series of speeches to roughly 1,000 coaches and administrators. The general tone was both laudatory and defiant – celebrating the sport’s place in American society while defending it against the perception it may be too dangerous for kids. Among the speakers was Pro Football Hall of Fame President David Baker, who stated that America might not survive if it loses football. He’s not alone with the doomsday

predictions. University of North Carolina coach Larry Fedora recently told reporters, “I fear that the game will get pushed so far to one extreme you won’t recognize the game 10 years from now. That’s what I worry about, and I do believe if it gets to that point our country goes down, too.”⁴³

“If we lose football, we lose a lot in America. I don’t know if America can survive.”

– David Baker,
president,
Pro Football Hall of Fame

These expressions reflect a cultural notion about the role of football in our society. Around the start of the 20th century, the game was among the sports promoted by leaders, including President Teddy Roosevelt, as a tool of nation-building. It was seen as a venue to channel the unruly energies of adolescent males and build generations of soldiers and factory workers for our expanding, then-largely industrial economy. The game only grew in popularity after a couple of World Wars, and all the symbiotic metaphors. President Dwight Eisenhower, who had played at West Point, wrote that “football, almost more than any other sport, tends to instill into men the feeling that victory comes through hard – almost slavish – work, team play, self-confidence, and an enthusiasm that amounts to dedication.”⁴⁴

These continue to be bedrock values in our culture. The questions to ask are: If flag becomes the standard way of playing the game until high school, can these values be taught as readily? Do we end up with generations of children who lack resilience, and the ability to work together, if bodies and heads collide less at the youth level? Do youth grow into adulthood less employable, or less interested in military service? What do we lose, if anything?

Nothing, some suggest. “In the [U.S.], we had robust civic life and leadership development before there was anything like football, and we can have that again,” says Jeff Prudhomme, vice president of the Interactivity Foundation, a nonprofit that explores public policy solutions through small group discussions. “There can be other sports

around which communities can come together without risking the cognitive faculties of their young people. Leadership development can be engaged through many different sports, and through non-sport activities including the arts, in ways that doesn’t endanger the lives of those we seek to help develop.”



Former NFL player Donté Stallworth is skeptical of the point of view that all kids can just take up other activities. Growing up in what he called a “rough” neighborhood engulfed by gangs and drugs, he wrote

in the *New York Times*,⁴⁵ football taught him “teamwork, perseverance [and] accountability” that has served him well. “For many communities, including my own, sports provided one of the only outlets to avoid even greater dangers. And sports taught me life lessons, at an impressionable age, that I may not have learned otherwise.”

Football Participation			
Percentage of kids 6 to 12 who participated on a regular basis			
	2012	2017	# Kids in 2017
Flag Football	2.8%	3.3%	988,260
Tackle Football	3.6%	2.9%	871,465

Source: Sports and Fitness Industry Association data from national surveys taken by Sports Marketing Surveys.

Note: Regular participation usually includes a level of organized play.

Paul Watkins, a Pop Warner regional director, says football works hard to remain accessible to kids who lack the means to participate. He told the *San*

*Diego Union-Tribune*⁴⁶ in 2017 that his organization offers scholarships to players, requiring that they maintain good grades, and provides instruction about teamwork and community. “It’s a team sport that crosses all racial and socioeconomic barriers,” Watkins said. “Once you get on the football field, it’s all for the team. Kids learn a lot about each other. What we’re basically doing is trying to prepare these young men to be successful as men.”

Foxworth, the former NFL player and NFLPA president, believes that loss may be felt most profoundly in African-American communities, where football is sometimes one of the only available youth sports and points of civic pride. “The frightening thing for me is [if] you remove football, [then] what do you replace it with for opportunities for those communities?” he says.

Borland, who retired after one NFL season due to concerns about brain injuries, says that flag football, and other sports, must be introduced, if we’re looking to develop the traits tackle football most associates itself with. He has worked with University of Wisconsin neuroscientists who are studying how to develop resilience in the brains and minds of young people. “Compromising the organ that would constitute that development is silly,” he says. “To me, I think a broader definition of toughness is restraint, not the capacity to do harm, but the capacity to do harm and then not. Martial arts are a great way to do that.”

ASPEN INSTITUTE ANALYSIS

We appreciate the hazards of merely eliminating tackle football in communities of need, without a replacement strategy that includes the addition of new sport offerings. It’s impossible to teach the values and character traits that we hope sports imparts if a child is stuck on a couch with no options. Physical inactivity and obesity are greater threats to their health and vitality, and to our society, than the risk of getting injured playing football or other sports. We also recognize that football can offer psychosocial benefits to youth that are valuable.

At the same time, there’s a developmentally appropriate time for everything. Life lessons are best taught when youth have the mental maturity and perspective to process them; before they reach adolescence and perhaps high school, it’s more about creating experiences where kids can have fun with their friends and develop physical literacy, or all-around athleticism that lays the groundwork for them to be active for life. Pre-teens are likely to learn more about sportsmanship, leadership and integrity from watching a coach who honors the game, its rules and his players, than one who offers long postgame lectures.

Historically, most of the programs designed to develop character through football were aimed at adolescents. Tackle football for second- and third-graders wasn’t part of the original plan, in most

**“If we can rally
around football,
we can certainly
rally around any
other sport.”**

– Steven Horwitz,
founder,
TeamSafe Sports

schools or Pop Warner. The game has just evolved that way, increasingly over the past generation, driven by sufficient marketplace demand from parents who aim to position their child for success in the sport.

We suspect that flag football could prepare children for the world ahead no less readily than tackle football, and other sports, especially if delivered by coaches trained to work with youth. In doing so, we suspect the values that we most hope get transmitted via football – from grit to self-sacrifice – will be upheld and elevated. Flag football for kids may even open new vistas, such as enhanced respect among boys for girls that comes with mixed-gender play.



Conclusion

In 1907, the *Journal of the American Medical Association* condemned tackle football participation for anyone under age 18, calling it “no sport for boys to play.”⁴⁷ Until the 1950s and ’60s, tackle football before high school was uncommon. So while the notion of holding off on it until then may seem radical, it’s nothing new. This debate merely has been pushed to the forefront because it’s clear how much more is at stake now, starting with brains of children, which need to function effectively and efficiently to thrive in the new, information-based economy.

None of the bills that state legislators have put forth proposing to prohibit tackle football before adolescence have passed. We expect any attempt to impose a minimum age for tackle football participation via government intervention will continue to face an uphill battle. Laws designed to protect children from potential harms are not unheard of – as with the federal Children’s Online Privacy Protection Rule limiting the collection of information from kids under age 13 – but getting them passed is challenging and in this case, the idea of government limiting what parents do with their children could stoke public discontent and partisan politicization. (President Donald Trump has not weighed in on youth football, only the NFL, saying the league is “ruining the game” through its efforts to restrict dangerous tackling. “Because you know, today if you hit too hard – 15 yards! Throw him out of the game,” he tweeted in 2017).

Many youth tackle programs take safety seriously, minimizing head contact and dangerous activities in practice. Regardless, the game of football is changing and will continue to do so, driven by medical and legal considerations. We see it as a positive development that flag last year passed tackle in popularity among 6- to 12-year-olds, and project more benefits will flow to children, society and most stakeholders if flag becomes the standard way of playing the game until high school.

Getting there will require leadership. Specifically, we recommend:

- USA Football, Pop Warner, and all other youth football organizations shift to a standard of flag football before age 14.
- Those same organizations begin to teach fundamental blocking, tackling, and hitting skills in practice at age 12 – the better to prepare interested athletes for high school football – and do so in a controlled, safe-as-possible manner that does not involve player-to-player and helmet-to-helmet hitting and contact, akin to what the Dartmouth football team does in its practices.
- High school and college football programs also minimize non-game tackling and player collisions by adopting Dartmouth-style instruction and practice standards.
- The football industry and other relevant stakeholders – including high schools and colleges – expand their flag football offerings so that individuals can continue to participate in the sport without having to transition to tackle.

To be effective, these recommendations need full, interlocking support from both the football and medical communities. In the 1990s and 2000s, the NFL spent more than \$100 million promoting youth

tackle football and in 2014 invested \$45 million in programs created by USA Football. Shifting more of the investments to youth flag and the training of coaches as kids approach high school likely would reap demonstrable results.

Drew Brees has certainly seen the marketplace respond. Among the growing number of NFL veterans who has questioned the point and purpose of youth tackle, the New Orleans Saints quarterback in 2017 started a mixed gender flag football league in Louisiana that serves kids from kindergarten through 10th grade. Brees' Football 'N' America already has placed leagues in California, Louisiana, Illinois, Indiana and Ohio. "I would not let my kids play tackle football right now," he said.⁴⁸ "I don't think that's necessary, and I don't think it's as fun at this level, and I just think there's too much risk associated with putting pads on right now at this age."

Next up for his flag league? Texas, where he grew up playing flag until the start of high school.

"I think that this has the opportunity to really save the game of football, honestly," he said.⁴⁹

And perhaps, more importantly, enhance the lives of millions of children.

Endnotes

1. National Federation of State High School Associations, 2017-18 participation data. This figure counts for boys and girls of all levels of tackle football, from 11-player down to 6-player.
2. *2017 Sports and Fitness Industry Association Tackle Football Single Sport Participation Report*.
3. *UMass Lowell Center for Public Opinion Research Citizen Attitudes about Sports, Concussions and CTE*, May 31-June 6, 2016.
4. "California Would Bar Organized Tackle Football Before High School Under New Bill," *Los Angeles Times*, Feb. 18, 2018.
5. "Bills in Illinois, New York Propose Age Restriction For Tackle Football Among Youths," *Washington Post*, Jan. 25, 2018.
6. "Maryland Bill Would Bar Tackle Football For Kids on Public Fields Until High School," *Baltimore Sun*, Feb. 6, 2018.
7. "Can a Group of Former NFL Players Convince Parents to Only Let Their Kids Play Flag Football?" *USA Today*, Jan. 18, 2018.
8. CTE Awareness Foundation.
9. *Clinicopathological Evaluation of Chronic Traumatic Encephalopathy in Players of American Football*, JAMA Network, July 25, 2017.
10. "Hits to the Head Don't Differ With Age, Research Indicates," *New York Times*, Sept. 24, 2013.
11. *Subconcussive Head Impact Exposure and White Matter Tract Changes over a Single Season of Youth Football*, RSNA Radiology.
12. "Playing Tackle Football Before 12 Is Tied to Brain Problems Later," *New York Times*, Sept. 19, 2017.
13. *Age at First Concussion Influences the Number of Subsequent Concussions*, National Center for Biotechnology Information.
14. *Association of Playing High School Football with Cognition and Mental Health Later in Life*, JAMA Network.
15. *High School Football Players, 1956-1970, Did Not Have Increase of Neurodegenerative Diseases*, Mayo Clinic.
16. "A Single Season of Football Can Change a Kid's Brain, New Research Shows," KERA News, Jan. 17, 2018.
17. "'Does CTE Call For An End to Youth Tackle Football?'" *Minneapolis Star-Tribune*, Feb. 10, 2018.
18. *Tolerable Risks: Physicians and Youth Tackle Football*, The New England Journal of Medicine, Feb. 10, 2016.
19. *American Academy of Pediatrics Guidelines on Reducing Serious Injuries in Youth Hockey*, May 26, 2014.
20. *American Academy of Pediatrics Policy Statement - Boxing Participation by Children and Adolescents*, August 2011.
21. *Attitudes and Counseling Practices of Pediatricians Regarding Youth Sports Participation and Concussion Risks*, National Center for Biotechnology Information, May 2017.
22. "Canadian Youth Hockey Injuries Cut in Half After National Policy Change," *Reuters*, March 21, 2017.
23. "Barack Obama Is Not Pleased: The President on His Enemies, the Media, and the Future of Football," *New Republic*, Jan. 27, 2013.
24. "NFL Players Will Let Kids Play Football – If They Start Older," *ESPN.com*, April 2, 2016.
25. "Football's Brain Injury Crisis Lands in Family Court," *New York Times*, March 5, 2018.
26. "Future of Football: Flag Vs. Tackle the Concussion Battleground For Children," *Tampa Bay Times*, June 2, 2017.
27. "Why the Oklahoma Drill Can Wait For Youth Football," USA Football website, March 28, 2018.

28. "Future of Football: Flag Vs. Tackle the Concussion Battleground For Children," *Tampa Bay Times*, June 2, 2017.
29. Dr. Uzma Samadani, Twitter post, Feb. 12, 2018.
30. 2017 data from Sports and Fitness Industry Association. Core participation means playing football on a regular basis as defined by SFIA and usually includes a level of organized play.
31. National Federation of State High School Associations, 2017-18 participation data. This figure counts for boys and girls of all levels of tackle football, from 11-player down to 6-player.
32. "Football's Decline Has Some High Schools Disbanding Teams," *Associated Press*, Oct. 6, 2017.
33. "BAMS Switches to Padded Flag Football," *Brattleboro Reformer*, July 13, 2017.
34. National High School Sports-Related Injury Surveillance Study, Colorado School of Public Health.
35. Data from USA Today Sports athletic department revenue database for fiscal year 2017. This statistic accounted for 108 of 129 public universities in the Football Bowl Subdivision.
36. "NFL Reaches \$14 Billion, Fueled by Media," *SportsBusiness Journal*, March 6, 2017.
37. Rich Luker, Luker on Trends, 2016.
38. Liverocksolid.com
39. HipFootball.com
40. "Not Safe for Children? Football's Leaders Make Drastic Changes to Youth Game," *New York Times*, Jan. 31, 2017.
41. "Pop Warner Settles Wrongful Death Lawsuit, Could Open 'Floodgates,'" *USA Today Sports*, March 9, 2016.
42. "Moms Take on Football, Suing Pop Warner For Their Sons' Head Traumas, Deaths," *San Diego Union Tribune*, Jan. 28, 2018.
43. "North Carolina Coach Larry Fedora Rants About CTE and Says Football is 'Under Attack,'" *USA Today Sports*, July 18, 2018.
44. "Dwight D. Eisenhower, At Ease: Stories I Tell to Friends," Garden City, NY: Doubleday, 1967.
45. "School Sports Provide Lessons in How to Live," *New York Times*, Dec. 22, 2015.
46. "Concussion Concerns Affect Youth Football," *San Diego Union Tribune*, Nov. 26, 2017.
47. *Football Mortality Among Boys*, JAMA Network, Dec. 19, 2007.
48. "Drew Brees is Starting a Flag Football League to 'Save the Game of Football,'" *CBSSports.com*, June 28, 2017.
49. "Saints QB Drew Brees Launching Co-Ed Youth Flag Football League," *ESPN.com*, June 28, 2017.

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